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*Supporting Enterprise Networks and Operating Environments*

# SUPPORT

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**Performance  
and Tuning**

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## FEATURES

### **8** A Letter to Your CIO: Start Your Performance Engine

*By Neil Ervin*

Your CIO chooses the degree to which the performance engine, the performance tuning and capacity planning, will be performed by you as well as others in the IS department. This article presents a proposal that you can present to your CIO for implementing or expanding the performance services within your company.



### **24** Client/Server Performance Management

*By Howard W. Miller*

As more business-critical applications are placed on networks, organizations currently running client/server applications or planning to migrate to client/server need to develop a strategy to actively monitor all hardware, networks and applications.



## NETWORKING



### **29** Helpful Hints for Telecommuters and Nomadic Users: Part II — Data Communications *By Leo A. Wrobel*

Providing efficient and cost-effective data communications services to home-bound and nomadic users is paramount to ensuring a proper business image is presented.

### **33** Windows 95 Setup From a NetWare Network

*By John E. Johnston*

You can greatly simplify the task of loading Windows 95 to the workstations connected to your LAN by using your NetWare file server.

### **42** Protecting Networks With and Without Firewalls: Part III — TCP Spoofing: The Sequence Number Attack

*By Mark Bell*

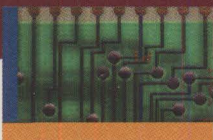
The sequence number attack is a lethal attack; one which cannot, under certain circumstances, be prevented by a firewall.

### **48** Chicken Soup for Administrators: Part I — Putting it All Into Perspective

*By Guy C. Yost*

For administrators and network support professionals the day-to-day tasks can be overwhelming. This article will help you put job-related tasks into perspective and offers some ideals and practices to help you cope.

## SYSTEMS



### **14** Assessing Year 2000 Conversion Project Costs

*By C.E. Scott*

There are many variables that need to be factored into the Year 2000 conversion cost equation. The key to accurately assessing the overall cost is thoroughly examining these variables before starting the conversion process.

### **20** The Tip of the Iceberg: RAMAC Virtual Array — Part I

*By Chris Evans*

Virtual array storage offers many benefits over conventional storage options, including improvements in performance, space availability and data optimization.

### **51** Building a Backup VSE System on ESARES and ESAWK1

*By Anthony L. Kelley*

This article examines how one site created a VSE backup system to prevent the possible loss of DASD.



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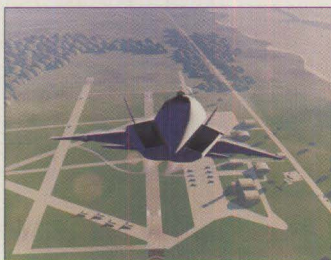
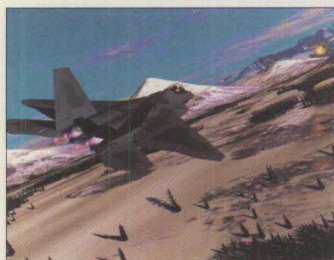
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|---|---|
| <p><b>57</b> <b>MVS Tools &amp; Tricks</b><br/>Harnessing Macro Power: Part I<br/><i>By Sam Golob</i></p> <p><b>60</b> <b>Working Smarter</b><br/>Please EXCLUDE Me<br/><i>By Jim Moore</i></p> <p><b>62</b> <b>VM Toolbox</b><br/>More Tools for the Toolbox<br/><i>By John D. Kinne</i></p> <p><b>64</b> <b>VSE Tools &amp; Techniques</b><br/>Special SYSLOG I/O<br/><i>By Leo J. Langevin</i></p> <p><b>65</b> <b>Storage Strategies</b><br/>Picking the Winning Numbers:<br/>System-Determined Blocksize<br/><i>By Steve Pryor</i></p> | <p><b>67</b> <b>Enterprise Networking</b><br/>NPRINTER Replacements<br/><i>By John E. Johnston</i></p> <p><b>69</b> <b>OS/2 Insights</b><br/>Creating "Thin" Clients<br/><i>By Michael Norton</i></p> <p><b>74</b> <b>Opening Windows</b><br/>Uncomplicating Online Services<br/><i>By Al Shing</i></p> <p><b>76</b> <b>On a Personal Note</b><br/>Show Me the Money!<br/><i>By Mike Sutton</i></p> |
|---|---|

**D E P A R T M E N T S**

- |   |   |
|---|---|
| <p><b>47</b> <b>DEMOS on DEMAND and HOTLINKS</b></p> <p><b>55</b> <b>NaSPA News</b></p> <p><b>71</b> <b>Education Vendors</b></p> | <p><b>73</b> <b>Reader Services</b></p> <p><b>77</b> <b>Recent Releases</b></p> |
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Artist's renderings of Lockheed Martin - Boeing F-22 air dominance fighters. Artist: Steve Moore  
Special thanks to Lockheed Martin Aeronautical Systems



# Creating "Thin" Clients

BY MICHAEL NORTON

There is an old saying that figures lie and liars figure, which makes me wonder what those of us in the number-crunching business are exactly. Nonetheless, this is an exciting time in the world of computing. The sudden "discovery" of the Internet rattled not only the blue suits of IBM but the bell bottoms in Redmond as the two most prominent players in the game frantically raced to redefine their position in a suddenly networked world. Below them, almost invisibly, legions of ISVs have been retooling as well. The sum effect has been the sacrificing of some sacred cows and rethinking the way things are done, although in truth there is nothing really new under the sun. Computer science, while a relatively new discipline, pendulums from extreme to extreme in search of the "right" way of achieving the most fundamental task of computing machines: managing data. For example, mainframes and the entire "host/terminal" paradigm were pronounced dinosaurs just a few years ago by pundits advocating LANs and client/server as the ultimate solution. Ironically, the PC revolution is now threatened by a return to the "host/terminal" model in the guise of "network machines", which promise to substantially reduce the absurdly high cost of supporting PCs in enterprise environments. And since TCP/IP, the Internet technology which is propelling the changes, was originally formulated to connect the world's mainframes, the new technologies are now discovering that mainframes make perfect servers, er, hosts, and the newest buzzword is "thin client".

The next several columns will focus on examples of products which illustrate how these concepts are changing. Next month's column will examine IBM's Lotus Domino, which represents the marriage of client/server technologies to the Internet. This month, I will examine CrossWins, a new product from SoftTouch Systems. CrossWins is a development package for creating "thin client" applications in REXX which execute on any of IBM's host operating systems, including OS/390 (MVS), VM, OS/400, AIX and OS/2. The user interacts with the application through GUI dialogs on the workstation functioning as a "thin client". See Figure 1.

**Instead of being competitors, CrossWins and Java are two examples of how the old rules are being broken and a new paradigm is being formed: a paradigm eclectic in its implementation and refusing to be shackled by labels and dogma which have often choked progress.**

The dialogs are defined and generated by the host REXX program, communicating via TCP/IP, APPC (LU6.2) or Named Pipes. Figure 2 illustrates this relationship.

Those of you familiar with Xwindows will immediately recognize a conceptual similarity between the two products; although programming a CrossWins application in REXX is simpler and faster than using Xwindow widgets. In both technologies the underlying philosophy is to let the host do what it does best — process data — and the workstation do what it does best — display data and interface with the user, a fundamental tenet of the "thin client/fat server" paradigm. The "thin client" model is opposite of the "fat client" model, with monolithic applications on the client performing much, if not all, of the number crunching and the server essentially functioning as a networking facility.

The "fat client" paradigm suffers from some rather serious liabilities, not the least of which are the aforementioned support problems. Large, complex applications are more likely to cause

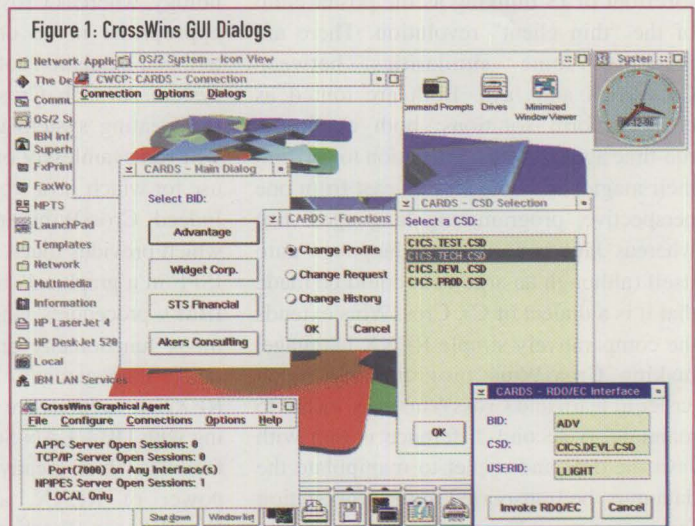
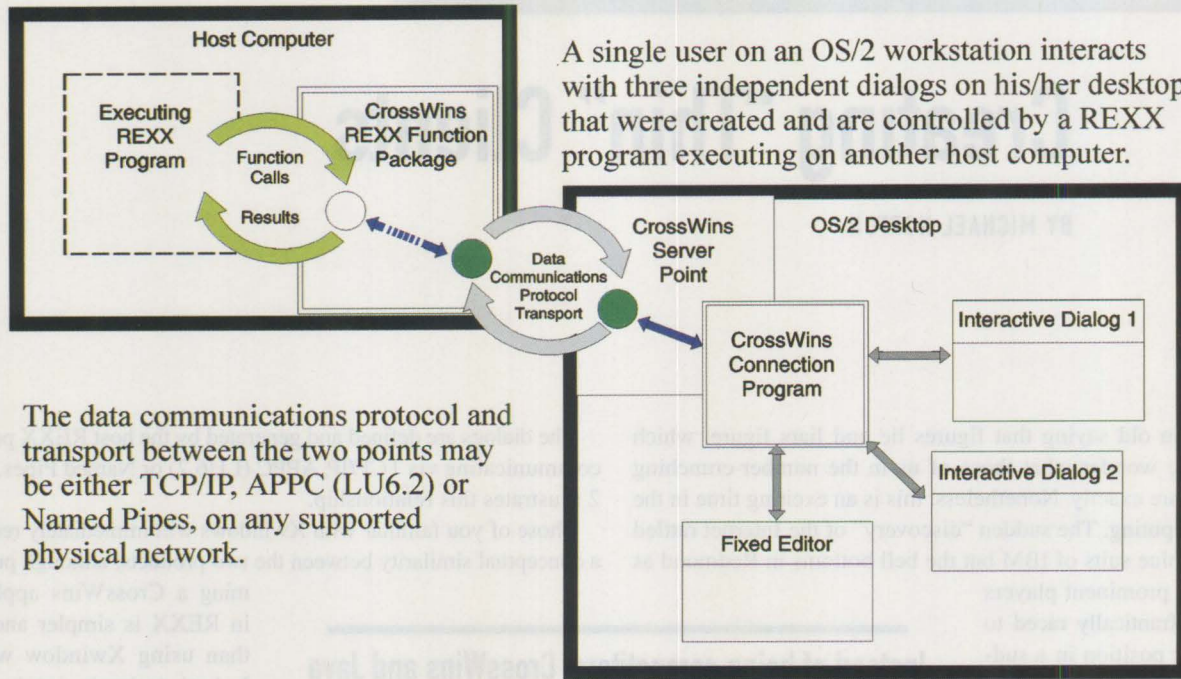




Figure 2: Basic Dialog Model



configuration problems and are naturally more susceptible to bugs. Additionally, changes in an application mean rolling out the new version on multiple machines, a time-consuming and inherently inconvenient procedure in large environments. With "thin client" solutions such as CrossWins, these problems are remarkably simplified since the application code and data exist only on the host. Updating an application requires nothing more than updating the code on the host.

These virtues, of course, are some of the same virtues which propelled another relatively new technology, Java, to the forefront of IS thinking as the poster child of the "thin client" revolution. There are certainly some similarities between CrossWins and Java. Both are touted as cross-platform solutions; both employ a run-time agent on the workstation to perform their magic; and both are, at least from one perspective, programming languages. But whereas Java is a complete language unto itself (although an argument could be made that it is a dialect of C), CrossWins extends the comparatively simple REXX language, making CrossWins programming much easier to learn and CrossWins code easier to maintain. A second difference is that with Java the data and applet to manipulate the data must be transported to the workstation for execution, whereas CrossWins merely

provides the data and instructions to the agent on the workstation, meaning CrossWins will be significantly faster for many applications. Finally, some security concerns have been raised about Java. CrossWins, however, operates completely within the security facilities of the host machine.

This is not to suggest that CrossWins and Java are competitive technologies; they are not. For one thing, Java is designed to be platform-independent, while CrossWins is designed to function across IBM-specific platforms, especially in enterprise environments. Secondly, Java, at least as it has been implemented so far, is a Web-centric technology, whereas CrossWins would be more appropriate in an enterprise which uses terminal emulation software to access a host system. As such, CrossWins is a useful tool for creating system utility routines which will run seamlessly on a variety of hosts, a use for which Java would not be well suited. Indeed CrossWins includes sample code which provides much of the functionality of ISPF in a graphical environment. REXX, as IBM's procedures language, provides enormous functionality and flexibility for system's management. Moreover, additional REXX extensions are available for interfacing with DB2, LAN Server, CICS, and other facilities which greatly expand the scope and power of REXX, and consequently of CrossWins, to function as a powerful cross-

platform system management resource.

Instead of being competitors, CrossWins and Java are two examples of how the old rules are being broken and a new paradigm is being formed; a paradigm eclectic in its implementation and refusing to be shackled by labels and dogma which have often choked progress. For example, the workstation component of CrossWins is, technically speaking, a server which processes requests from the host client for graphical elements. So is it truly a "thin client" technology? Go figure. **ts**

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